



# SEQUENCE LISTING

<110> Otto, Eric  
Escovar-Kousen, Jose

<120> Ethanol Production By Simultaneous Saccharification and  
Fermentation (SSF)

<130> 10325.200-US

<160> 8

<170> PatentIn version 3.3

<210> 1

<211> 25

<212> PRT

<213> Talaromyces emersonii

<220>

<221> misc\_feature

<222> (13)..(13)

<223> Xaa can be any naturally occurring amino acid

<400> 1

Ala Asn Gly Ser Leu Asp Ser Phe Leu Ala Thr Glu Xaa Pro Ile Ala  
1 5 10 15

Leu Gln Gly Val Leu Asn Asn Ile Gly  
20 25

<210> 2

<211> 20

<212> PRT

<213> Talaromyces emersonii

<400> 2

Val Gln Thr Ile Ser Asn Pro Ser Gly Asp Leu Ser Thr Gly Gly Leu  
1 5 10 15

Gly Glu Pro Lys  
20

<210> 3

<211> 22

<212> PRT

<213> Talaromyces emersonii

<220>

<221> misc\_feature  
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<220>  
 <221> misc\_feature  
 <222> (12)..(12)  
 <223> Xaa can be any naturally occurring amino acid

<400> 3

Xaa Asn Val Asn Glu Thr Ala Phe Thr Gly Pro Xaa Gly Arg Pro Gln  
 1 5 10 15

Arg Asp Gly Pro Ala Leu  
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<210> 4  
 <211> 35  
 <212> PRT  
 <213> Talaromyces emersonii

<400> 4

Asp Val Asn Ser Ile Leu Gly Ser Ile His Thr Phe Asp Pro Ala Gly  
 1 5 10 15

Gly Cys Asp Asp Ser Thr Phe Gln Pro Cys Ser Ala Arg Ala Leu Ala  
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Asn His Lys  
 35

<210> 5  
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<220>  
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 <223> Xaa can be any naturally occurring amino acid

<400> 5

Thr Xaa Ala Ala Ala Glu Gln Leu Tyr Asp Ala Ile Tyr Gln Trp Lys  
 1 5 10 15

<210> 6  
 <211> 35

<212> PRT  
 <213> Talaromyces emersonii  
 <400> 6

Ala Gln Thr Asp Gly Thr Ile Val Trp Glu Asp Asp Pro Asn Arg Ser  
 1 5 10 15

Tyr Thr Val Pro Ala Tyr Cys Gly Gln Thr Thr Ala Ile Leu Asp Asp  
 20 25 30

Ser Trp Gln  
 35

<210> 7  
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 <400> 7

Ala Thr Gly Ser Leu Asp Ser Phe Leu Ala Thr Glu Thr Pro Ile Ala  
 1 5 10 15

Leu Gln Gly Val Leu Asn Asn Ile Gly Pro Asn Gly Ala Asp Val Ala  
 20 25 30

Gly Ala Ser Ala Gly Ile Val Val Ala Ser Pro Ser Arg Ser Asp Pro  
 35 40 45

Asn Tyr Phe Tyr Ser Trp Thr Arg Asp Ala Ala Leu Thr Ala Lys Tyr  
 50 55 60

Leu Val Asp Ala Phe Asn Arg Gly Asn Lys Asp Leu Glu Gln Thr Ile  
 65 70 75 80

Gln Gln Tyr Ile Ser Ala Gln Ala Lys Val Gln Thr Ile Ser Asn Pro  
 85 90 95

Ser Gly Asp Leu Ser Thr Gly Gly Leu Gly Glu Pro Lys Phe Asn Val  
 100 105 110

Asn Glu Thr Ala Phe Thr Gly Pro Trp Gly Arg Pro Gln Arg Asp Gly  
 115 120 125

Pro Ala Leu Arg Ala Thr Ala Leu Ile Ala Tyr Ala Asn Tyr Leu Ile

130						135						140					
Asp	Asn	Gly	Glu	Ala	Ser	Thr	Ala	Asp	Glu	Ile	Ile	Trp	Pro	Ile	Val		
145					150					155					160		
Gln	Asn	Asp	Leu	Ser	Tyr	Ile	Thr	Gln	Tyr	Trp	Asn	Ser	Ser	Thr	Phe		
				165					170					175			
Asp	Leu	Trp	Glu	Glu	Val	Glu	Gly	Ser	Ser	Phe	Phe	Thr	Thr	Ala	Val		
			180					185						190			
Gln	His	Arg	Ala	Leu	Val	Glu	Gly	Asn	Ala	Leu	Ala	Thr	Arg	Leu	Asn		
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His	Thr	Cys	Ser	Asn	Cys	Val	Ser	Gln	Ala	Pro	Gln	Val	Leu	Cys	Phe		
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Leu	Gln	Ser	Tyr	Trp	Thr	Gly	Ser	Tyr	Val	Leu	Ala	Asn	Phe	Gly	Gly		
225					230					235					240		
Ser	Gly	Arg	Ser	Gly	Lys	Asp	Val	Asn	Ser	Ile	Leu	Gly	Ser	Ile	His		
				245					250					255			
Thr	Phe	Asp	Pro	Ala	Gly	Gly	Cys	Asp	Asp	Ser	Thr	Phe	Gln	Pro	Cys		
			260					265					270				
Ser	Ala	Arg	Ala	Leu	Ala	Asn	His	Lys	Val	Val	Thr	Asp	Ser	Phe	Arg		
		275					280					285					
Ser	Ile	Tyr	Ala	Ile	Asn	Ser	Gly	Ile	Ala	Glu	Gly	Ser	Ala	Val	Ala		
	290					295					300						
Val	Gly	Arg	Tyr	Pro	Glu	Asp	Val	Tyr	Gln	Gly	Gly	Asn	Pro	Trp	Tyr		
305					310					315					320		
Leu	Ala	Thr	Ala	Ala	Ala	Ala	Glu	Gln	Leu	Tyr	Asp	Ala	Ile	Tyr	Gln		
				325					330					335			
Trp	Lys	Lys	Ile	Gly	Ser	Ile	Ser	Ile	Thr	Asp	Val	Ser	Leu	Pro	Phe		
			340					345					350				
Phe	Gln	Asp	Ile	Tyr	Pro	Ser	Ala	Ala	Val	Gly	Thr	Tyr	Asn	Ser	Gly		
		355					360					365					

Ser Thr Thr Phe Asn Asp Ile Ile Ser Ala Val Gln Thr Tyr Gly Asp  
 370 375 380

Gly Tyr Leu Ser Ile Val Glu Lys Tyr Thr Pro Ser Asp Gly Ser Leu  
 385 390 395 400

Thr Glu Gln Phe Ser Arg Thr Asp Gly Thr Pro Leu Ser Ala Ser Ala  
 405 410 415

Leu Thr Trp Ser Tyr Ala Ser Leu Leu Thr Ala Ser Ala Arg Arg Gln  
 420 425 430

Ser Val Val Pro Ala Ser Trp Gly Glu Ser Ser Ala Ser Ser Val Leu  
 435 440 445

Ala Val Cys Ser Ala Thr Ser Ala Thr Gly Pro Tyr Ser Thr Ala Thr  
 450 455 460

Asn Thr Val Trp Pro Ser Ser Gly Ser Gly Ser Ser Thr Thr Thr Ser  
 465 470 475 480

Ser Ala Pro Cys Thr Thr Pro Thr Ser Val Ala Val Thr Phe Asp Glu  
 485 490 495

Ile Val Ser Thr Ser Tyr Gly Glu Thr Ile Tyr Leu Ala Gly Ser Ile  
 500 505 510

Pro Glu Leu Gly Asn Trp Ser Thr Ala Ser Ala Ile Pro Leu Arg Ala  
 515 520 525

Asp Ala Tyr Thr Asn Ser Asn Pro Leu Trp Tyr Val Thr Val Asn Leu  
 530 535 540

Pro Pro Gly Thr Ser Phe Glu Tyr Lys Phe Phe Lys Asn Gln Thr Asp  
 545 550 555 560

Gly Thr Ile Val Trp Glu Asp Asp Pro Asn Arg Ser Tyr Thr Val Pro  
 565 570 575

Ala Tyr Cys Gly Gln Thr Thr Ala Ile Leu Asp Asp Ser Trp Gln  
 580 585 590

<210> 8  
 <211> 514  
 <212> PRT  
 <213> B. stearothermophilus

<400> 8

Ala Ala Pro Phe Asn Gly Thr Met Met Gln Tyr Phe Glu Trp Tyr Leu  
 1 5 10 15

Pro Asp Asp Gly Thr Leu Trp Thr Lys Val Ala Asn Glu Ala Asn Asn  
 20 25 30

Leu Ser Ser Leu Gly Ile Thr Ala Leu Trp Leu Pro Pro Ala Tyr Lys  
 35 40 45

Gly Thr Ser Arg Ser Asp Val Gly Tyr Gly Val Tyr Asp Leu Tyr Asp  
 50 55 60

Leu Gly Glu Phe Asn Gln Lys Gly Ala Val Arg Thr Lys Tyr Gly Thr  
 65 70 75 80

Lys Ala Gln Tyr Leu Gln Ala Ile Gln Ala Ala His Ala Ala Gly Met  
 85 90 95

Gln Val Tyr Ala Asp Val Val Phe Asp His Lys Gly Gly Ala Asp Gly  
 100 105 110

Thr Glu Trp Val Asp Ala Val Glu Val Asn Pro Ser Asp Arg Asn Gln  
 115 120 125

Glu Ile Ser Gly Thr Tyr Gln Ile Gln Ala Trp Thr Lys Phe Asp Phe  
 130 135 140

Pro Gly Arg Gly Asn Thr Tyr Ser Ser Phe Lys Trp Arg Trp Tyr His  
 145 150 155 160

Phe Asp Gly Val Asp Trp Asp Glu Ser Arg Lys Leu Ser Arg Ile Tyr  
 165 170 175

Lys Phe Arg Gly Ile Gly Lys Ala Trp Asp Trp Glu Val Asp Thr Glu  
 180 185 190

Asn Gly Asn Tyr Asp Tyr Leu Met Tyr Ala Asp Leu Asp Met Asp His

	195		200		205										
Pro	Glu	Val	Val	Thr	Glu	Leu	Lys	Ser	Trp	Gly	Lys	Trp	Tyr	Val	Asn
	210					215					220				
Thr	Thr	Asn	Ile	Asp	Gly	Phe	Arg	Leu	Asp	Ala	Val	Lys	His	Ile	Lys
	225				230					235					240
Phe	Ser	Phe	Phe	Pro	Asp	Trp	Leu	Ser	Asp	Val	Arg	Ser	Gln	Thr	Gly
				245					250					255	
Lys	Pro	Leu	Phe	Thr	Val	Gly	Glu	Tyr	Trp	Ser	Tyr	Asp	Ile	Asn	Lys
			260					265					270		
Leu	His	Asn	Tyr	Ile	Met	Lys	Thr	Asn	Gly	Thr	Met	Ser	Leu	Phe	Asp
		275					280					285			
Ala	Pro	Leu	His	Asn	Lys	Phe	Tyr	Thr	Ala	Ser	Lys	Ser	Gly	Gly	Thr
	290					295					300				
Phe	Asp	Met	Arg	Thr	Leu	Met	Thr	Asn	Thr	Leu	Met	Lys	Asp	Gln	Pro
	305				310					315					320
Thr	Leu	Ala	Val	Thr	Phe	Val	Asp	Asn	His	Asp	Thr	Glu	Pro	Gly	Gln
				325					330					335	
Ala	Leu	Gln	Ser	Trp	Val	Asp	Pro	Trp	Phe	Lys	Pro	Leu	Ala	Tyr	Ala
			340					345					350		
Phe	Ile	Leu	Thr	Arg	Gln	Glu	Gly	Tyr	Pro	Cys	Val	Phe	Tyr	Gly	Asp
		355					360					365			
Tyr	Tyr	Gly	Ile	Pro	Gln	Tyr	Asn	Ile	Pro	Ser	Leu	Lys	Ser	Lys	Ile
	370					375					380				
Asp	Pro	Leu	Leu	Ile	Ala	Arg	Arg	Asp	Tyr	Ala	Tyr	Gly	Thr	Gln	His
	385				390					395					400
Asp	Tyr	Leu	Asp	His	Ser	Asp	Ile	Ile	Gly	Trp	Thr	Arg	Glu	Gly	Val
				405					410					415	
Thr	Glu	Lys	Pro	Gly	Ser	Gly	Leu	Ala	Ala	Leu	Ile	Thr	Asp	Gly	Pro
			420					425					430		

Gly Gly Ser Lys Trp Met Tyr Val Gly Lys Gln His Ala Gly Lys Val  
 435 440 445

Phe Tyr Asp Leu Thr Gly Asn Arg Ser Asp Thr Val Thr Ile Asn Ser  
 450 455 460

Asp Gly Trp Gly Glu Phe Lys Val Asn Gly Gly Ser Val Ser Val Trp  
 465 470 475 480

Val Pro Arg Lys Thr Thr Val Ser Thr Ile Ala Trp Ser Ile Thr Thr  
 485 490 495

Arg Pro Trp Thr Asp Glu Phe Val Arg Trp Thr Glu Pro Arg Leu Val  
 500 505 510

Ala Trp